



**BLUE ROCK
ENVIRONMENTAL, INC.**

Mr. Larry Olson
Tehama County Department of Environmental Health
633 Washington Street, Room 36
Red Bluff, CA 96080

June 20, 2005

GSR-1
File copy

Re: **Second Quarter 2005 Groundwater Monitoring Report &
No Further Action Request**
Griswold Siblings Property
1074 Highway 99W
Corning, CA
APN 69-210-58

Dear Mr. Olson,

This report presents the results of the recent groundwater monitoring activities at 1074 Highway 99W, Corning, California (site) (Figure 1), and was prepared on behalf of Ms. June Shook (contact for the Griswold Siblings) by Blue Rock Environmental, Inc. (Blue Rock). This report presents the results of the final groundwater monitoring event of four consecutive quarter-year events. This report concludes with an evaluation of cumulative site data and ends with a request for "no further action".

Background

Site Background

The site is located at 1074 Highway 99W in Corning, Tehama County, California (Figure 1). The site operated as a fuel service station from as early as 1938 through 1963. In 1963, the operation of the station was terminated, and the above-ground related structures were demolished. In late 2001 or early 2002 when they considered marketing the property for sale, the current property owners were advised that the underground storage tanks (USTs) may have been left in the ground despite the fact that the station was demolished. In 2002, exploratory excavations discovered the USTs.

UST Removal History

In August and September 2003, the UST system was removed. Removal activities consisted of removing three (3) 1,000-gal. gasoline USTs, one (1) 1,000-gal. diesel UST, and associated piping and two (2) dispensers (Figure 2). A total of 16 soil samples were collected and analyzed from beneath former USTs, piping, and dispensers. Soil samples were analyzed for concentrations of total petroleum hydrocarbons as diesel (TPHd), TPH as gasoline (TPHg), benzene, toluene, ethyl-benzene, xylenes (BTEX), Seven Fuel Oxygenates (MTBE, TBA, ETBE, DIPE, TAME, methanol, and ethanol), and Total Lead. Based on observations at the time of the UST removal and soil sample analytical results, the primary impact to the subsurface by the USTs was TPHd. A total of eight samples contained detectable concentrations of TPHd, with

the greatest concentration beneath the former diesel UST at 1,900 mg/kg in the northern tank bed. Only the two samples collected from beneath the diesel UST contained detectable levels of TPHg, from 1.1 to 39 mg/kg, and one of these samples was also the only sample to contain detectable levels of TEX, from 0.0055 to 0.016 mg/kg. These gasoline range detections may be the result of diesel impact, as the light end of diesel can overlap into the range quantified for TPHg, and aromatic hydrocarbons (i.e. TEX) are present in diesel at very low levels. It is noteworthy that neither TPHg nor BTEX were detected in any of the other 14 soil samples. Additionally, neither MTBE, TBA, ETBE, DIPE, TAME, methanol, nor ethanol were detected in any of the 16 samples collected. Based on these data, gasoline range hydrocarbons and oxygenate additives did not appear to be compounds of concern at the site. Total Lead was detected in all soil samples at concentrations ranging from 1.71 to 18.5 mg/kg. These concentrations fall within the range of native background levels (between approximately 10 and 20 mg/kg) for the area, as reported by the U.S. Geological Survey (Professional Paper 1270). Thus, the total lead concentrations detected during UST removal likely represent native background concentrations.

Approximately 79 tons of soil excavated for UST removal were chemically characterized and transported to Bio-Industries in Red Bluff for disposal and treatment. The only compounds detected in the characterization samples (STKP-1 and STKP-2) were TPHd (35 to 45 mg/kg) and Total Lead (23.4 to 27.0 mg/kg). Neither TPHg, BTEX, nor the Seven Fuel Oxygenates were detected in the characterization samples.

Investigation History

In July 2004, Blue Rock supervised the drilling and installation of three groundwater monitoring wells (MW-1 through MW-3) proximal to the former fuel islands and the former northern UST bed, where previous TPHd impact had been detected (Figure 2). Monitoring well construction data are summarized in Table 1. A list of all of investigation and monitoring reports generated for the site is provided in the References section.

Summary of Hydrogeology

Results of the investigation indicated that the site is underlain by soil types ranging from silty clays to silty gravels. Two permeable zones were noted below the site: (1) a clayey gravel unit from approximately 12 to 19 feet below ground surface (bgs), and (2) a sand/gravel unit from 24 to 37 feet bgs. The two permeable zones are separated by a clay from 19 to 24 feet bgs. The upper permeable zone did not yield water in the borings at the time of drilling. Therefore, the wells were screened in the lower permeable zone, where water stabilized at a depth of approximately 31 feet during drilling. Cross-sections are included as Figures 3A and 3B.

From July 2004 to June 2005, depth to groundwater in wells MW-1 through MW-3 have ranged from approximately 22 to 37 feet bgs. During three of the four monitoring events, groundwater flow has been toward the northeast, except the one monitoring event (January 2005) when groundwater flow was toward the south.

Summary of Residual Soil Impacts

Cumulative soil sampling from the UST removal and investigation indicate the residual petroleum impacts to soil are minimal. Using investigation data, Blue Rock estimated the residual TPHd sorbed-phase mass as 253 lbs (or 41 gal of diesel) at a depth of approximately 6 to 13 feet bgs around and below the former northern UST system (please refer to the Blue Rock's *Preliminary Subsurface Investigation Report* dated July 27, 2004). This sorbed-phase TPHd mass is relatively low compared to other LUFT sites requiring active mitigation. Additionally, this limited sorbed-phase mass does not appear to represent a significant secondary source of groundwater contamination because the groundwater samples in that area are essentially free of detectable dissolved-phase contaminants. Soil sample data are summarized in Table 2, and shown on Figure 4.

Summary of Groundwater Investigation

Groundwater samples collected as part of the preliminary investigation were free of detectable levels of TPHd, TPHg, BTEX, Seven Fuel Oxygenates (MTBE, TBA, ETBE, DIPE, TAME, methanol, ethanol), and Total Lead, except for benzene at 0.69 µg/L in MW-2 (which is below the Maximum Contaminant Level for drinking water of 1 µg/L). Quarterly groundwater monitoring was initiated after well installation and sampling activities. The results of all three subsequent monitoring events indicated that TPHd, TPHg, BTEX, and MTBE were all non-detectable. Cumulative groundwater sample analytical data are summarized in Table 3.

Summary of Nearby Sensitive Receptors

The area around the subject property mixed residential, commercial, and agricultural. The property north of site is used as a hotel, the property east of the site is open agricultural land, the properties south of the site are mixed residential and commercial, and land to the west of the site is transversed by Interstate 5.

The nearest surface water body appears to be southeast flowing Jewett Creek, located approximately 1,300 feet south and west of the site (Figure 1).

The closest water well is an operational drinking water well present on the subject property, approximately 250 feet southwest of the former UST system. The owners indicated that this well was installed around 1951, is greater than 200 feet in depth, and recently tested free of fuel compounds during an analysis for a potential property transfer.

Second Quarter 2005 Groundwater Monitoring

Groundwater Monitoring Field and Laboratory Methods

On January 6, 2005, all three wells (MW-1 through MW-3) were monitored. An electronic water level indicator was used to gauge depth to water in each well, accurate to within ± 0.01 -foot. All wells were checked for the presence of light non-aqueous phase liquid (LNAPL) petroleum prior to purging. No measurable thicknesses of LNAPL were observed on groundwater in any of the wells.

In preparation for sampling, the wells were purged of groundwater until sampling parameters (temperature, pH, and conductivity) stabilized.

Following recovery of water levels to at least 80% of their static levels in the other wells, groundwater samples were collected from the wells using disposable polyethylene bailers and transferred to laboratory supplied containers. Sample containers were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the project laboratory.

Purging instruments were cleaned between use by an Alconox[®] wash followed by double rinse in clean tap water to prevent cross-contamination. Purge and rinse water was stored on-site in labeled 55-gallon drums pending future removal and disposal.

Groundwater monitoring and well purging information is presented on Gauge Data/Purge Calculations and Purge Data sheets (attached).

Groundwater samples were analyzed by Kiff Analytical LLC (Kiff), a DHS-certified laboratory, located in Davis, California, for the following analytes:

- TPHd by EPA Method 8015M after silica-gel clean-up by EPA Method 3630C
- TPHg, BTEX, and MTBE by EPA Method 8260B.

Groundwater Monitoring Results

Groundwater Flow Direction and Gradient

Static groundwater in the wells was present beneath the site at depths ranging from approximately 21.5 to 22 feet bgs. Gauging data, combined with well elevation data, were used to calculate groundwater elevations, flow direction, and gradient. The groundwater flow direction was calculated to be toward the northeast at a gradient of 0.03 ft/ft (Figure 5).

Groundwater Contaminant Analytical Results

Neither TPHd, TPHg, BTEX, nor MTBE were detected above method reporting limits in any of the groundwater samples analyzed during this event. These results are consistent with past sampling efforts completed in July 2004, October 2004, and January 2005.

Groundwater sample analytical results are shown graphically on Figure 6, and cumulative groundwater sample analytical results are summarized in Table 3. Copies of the laboratory report and chain-of-custody form are attached.

Request for No Further Action and Site Closure Activities

Rationale for No Further Action

Cumulative investigative and monitoring results were reviewed in light of guidance for UST sites provided by the Central Valley Regional Water Quality Control Board (CVRWQCB) in the *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites*, dated April 16, 2004. Site conditions were compared to the closure criteria identified in the section entitled *NFAR for Cases Above Background Groundwater Conditions* (even though it appears background conditions have been met at the site). Immediately following each criterion for closure is a summary of relative site conditions.

- (1) *The source of the UST release has been identified and removed.*

The entire UST system, consisting of four tanks, two dispenser islands, and associated piping, were removed in August 2003. This criterion for closure has been met.

- (2) *Free-phase product in groundwater has been removed to the full extent practicable, in accordance with UST regulations (Title 23, CCR, Section 2655).*

Free-phase product has never been observed at the site. Therefore, this criterion for closure has been met.

- (3) *Contaminants remaining in the vadose zone cannot migrate in soil vapor or leach concentrations that would cause groundwater to exceed water quality objectives.*

The contaminant of concern is diesel. Diesel fuel has low volatility at temperatures and pressures in the vadose zone, and, therefore, is not thought to be of concern for vapor migration. The extent and mass of residual contaminants in the vadose zone are extremely limited. It is estimated that approximately 253 lbs (or 41 gal of diesel) of diesel remain in the vadose zone at a depth of approximately 6 to 13 feet bgs around and below the former northern UST system. Soil samples below that depth, and between water table, are free of detectable contaminant concentrations. Groundwater below the residual soil contamination has been free of detectable contaminant concentrations for the last four consecutive quarter-year monitoring events, except for the first monitoring event (July 2004) when benzene was detected in MW-2 at a concentration of 0.69 µg/L. This criterion for closure has been met.

- (4) *There are no existing water supply wells, surface waters or other receptors threatened by the remaining contaminants in soil or groundwater.*

There are no detectable contaminants remaining in groundwater below the site in close proximity to former UST system components. Therefore, no water supply wells, surface waters or other receptors are threatened. This criterion for closure has been met.

- (5) *Pollutants remaining in groundwater do not create or threaten to create risk to human health and safety, or to future beneficial use(s) of the groundwater. Patterns of existing and future demands for usable water resources in the area must be considered in determining what period of time is reasonable to reach non-detectable (or background) concentrations.*

Since groundwater monitoring began, no contaminants (TPHd, TPHg, BTEX, Fuel Oxygenates, methanol, and ethanol) have been detected, except one detection of benzene in MW-2 at 0.69 µg/L in July 2004. The last three consecutive quarter-year monitoring events show that the groundwater below the former UST system components is free of detectable contamination, and, groundwater quality is currently consistent with background conditions. Therefore, this criterion for closure has been met.

- (6) *The plume size is stable and sufficiently limited in lateral and vertical extent and contaminant concentrations detected in groundwater show a decreasing trend with time. One hydrologic cycle (four quarters) of monitoring after active remediation measures have ceased is usually considered to be necessary to determine site groundwater and plume conditions.*

Three monitoring wells were installed in the locations of former UST system components following UST removal and disposal of approximately 79 tons of diesel impacted soil in August 2003. These wells were monitored for four consecutive quarter-year intervals (July 2004, October 2004, January 2005, and June 2005). Groundwater directly below the UST system components has been free of detectable contaminant concentrations for the duration of monitoring, except for the trace detection of benzene in MW-2 in July 2004. This criterion for closure has been met.

Based on the apparent satisfaction of all closure criteria by the site conditions, Blue Rock requests that the TCDEH and CVRWQCB issue a letter requiring "no further action" for this site.

Proposed Site Closure Activities

Monitoring Well Destruction

Following receipt of a “no further action” letter from the regulatory agencies, Blue Rock recommends proper destruction of the existing three wells, in accordance with TCDEH standards.

Disposition of Investigation Derived Soil

Soil derived from the monitoring well installation is currently stored on-site in labeled 55-gal. drums (6 total). A total of nine soil samples (three from each borehole) were analyzed as part of the preliminary investigation, and, thus, are representative of the stored soil. No fuel hydrocarbon compounds were detected in any of the nine soil samples, except for a concentration of 1.4 mg/kg TPHd in sample MW-2-15' (see Table 2, MW-1 through MW-3). Based on the fact that the stored soil is essentially free of fuel contamination, Blue Rock recommends spreading the soil pile thin across the unsurfaced portion of the site as a method of final deposition.

Disposition of Purge Water

Groundwater derived from investigation and monitoring activities is currently stored on-site in labeled 55-gal. drums (3 total). Cumulative groundwater sampling data from MW-1 through MW-3 indicate that the water from those wells are free of detectable contaminants (see Table 3), and, therefore, does not appear to pose a threat to the environment or human health. Because of this, Blue Rock recommends surface disposal of the water along the unsurfaced portion of the site near the former UST system as a method of final deposition.

References

- Clearwater Group, Inc., *UST Closure Report* (September 22, 2003)
- Blue Rock, *Preliminary Subsurface Investigation Workplan* (December 17, 2003)
- Blue Rock, *Preliminary Subsurface Investigation Report* (July 27, 2004)
- Blue Rock, *Fourth Quarter 2004 Groundwater Monitoring Report* (October 14, 2004)
- Blue Rock, *First Quarter 2005 Groundwater Monitoring Report* (January 14, 2005)

Certification

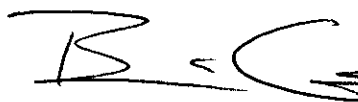
This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

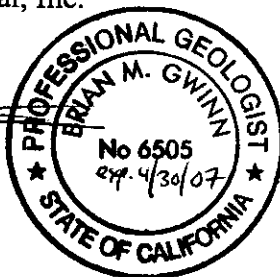
The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact at (650) 522-9292.

Sincerely,
Blue Rock Environmental, Inc.



Brian Gwinn, P.G.
Principal Geologist



Attachments:

- Site Location Map (Figure 1)
- Site Plan (Figure 2)
- Cross-Section A-A' (Figure 3A)
- Cross-Section B-B' (Figure 3B)
- Residual Soil Impact Map (Figure 4)
- Groundwater Elevation Map – 6/2/05 (Figure 5)
- Dissolved-Phase Contaminant Map – 6/5/05 (Figure 6)

- Well Construction Data (Table 1)
- Soil Sample Analytical Data (Table 2)
- Groundwater Elevations and Analytical Data (Table 3)

- Blue Rock Well Gauging Data/Purge Calculations and Well Purging Data
- Laboratory Report and Chain-of-Custody Form

cc:

- June Shook, 8530 Strong Ave., Orangevale, CA 95662
- James Hahn, 7409 Tennessee Lane, Vancouver, WA 98664
- Eric Rapport, CVRWQCB, 415 Knollcrest Dr., Ste. 100, Redding, CA 96002

TABLE 1
Well Construction Data
 Griswold Sibling Property
 1074 Highway 99W
 Corning, CA

Well ID	Date Installed	Total Boring Depth (ft bgs)	Casing Diameter (Inches)	Screen Depth (ft bgs)	Sandpack Depth (ft bgs)	Bentonite Depth (ft bgs)	Grout Depth (ft bgs)
MW-1	7/6/04	40	2	25 - 40	23 - 40	21 - 23	0 - 21
MW-2	7/7/04	40	2	27 - 40	26 - 40	24 - 26	0 - 24
MW-3	7/6/04	40	2	25 - 40	23 - 40	21 - 23	0 - 21

Notes:

ft bgs Feet below ground surface.

TABLE 2
Soil Sample Analytical Data
 Griswold Siblings Property
 1074 Highway 99W
 Corning, CA

Sample ID	Depth (ft bgs)	Sample Date	TPHd (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Methanol (mg/kg)	Ethanol (mg/kg)	Total Lead (mg/kg)
TG3W	9	8/15/03	100	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	4.29
TG3E	9	8/15/03	18	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	3.40
TD1W	9	8/15/03	1,200	39	<0.005	0.0068	0.0055	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	1.72
TD1E	9	8/15/03	1,900	1.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	1.87
TG2W	9	8/15/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	1.81
TG2E	9	8/15/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	1.71
TG1W	9	8/15/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	2.66
TG1E	9	8/15/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	2.19
PD-1	3	8/15/03	6.6	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	18.5
PD-2	3	8/15/03	44	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	9.05
PD-3	3	8/15/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	3.02
PD-4	3	9/10/03	13	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	7.21
PD-5	3	9/10/03	12	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	11.8
PD-6	3	9/10/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	3.84
PD-7	3	9/10/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	5.05
PD-8	3	9/10/03	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	2.81
MW-1	10	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	3.81
MW-1	25	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	4.06
MW-1	35	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	2.55
MW-2	15	7/7/04	1.4	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	2.82
MW-2	25	7/7/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	2.85
MW-2	35	7/7/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	6.54
MW-3	15	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	2.97
MW-3	25	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	5.85
MW-3	35	7/6/04	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	7.71
STKP-1*	2	8/15/03	45	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	27.0
STKP-2*	2	8/15/03	35	<1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.2	<0.01	23.4

Notes:

ft bgs Feet below ground surface
 mg/kg Milligrams per kilogram
 TPHd Total petroleum hydrocarbons as diesel by EPA Method 8015M
 TPHg Total petroleum hydrocarbons as gasoline by EPA Method 8260B
 BTEX Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B
 MTBE Methyl tert-butyl ether by EPA Method 8260B
 TBA Tert-butanol by EPA Method 8260B
 DIPE Di-isopropyl ether by EPA Method 8260B
 ETBE Ethyl tert-butyl ether by EPA Method 8260B
 TAME Tert-amyl methyl ether by EPA Method 8260B
 Methanol by EPA Method 8260B
 Ethanol by EPA Method 8260B
 Total Lead by EPA Method 6010B
 * Samples from soil pile (~79 tons) generated from UST removal that was transported to the Bio-Industries in Red Bluff, CA for disposal.

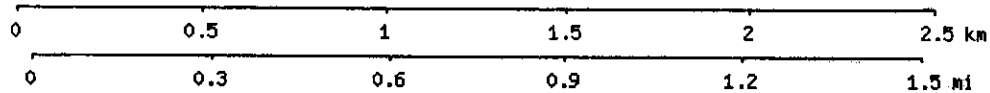
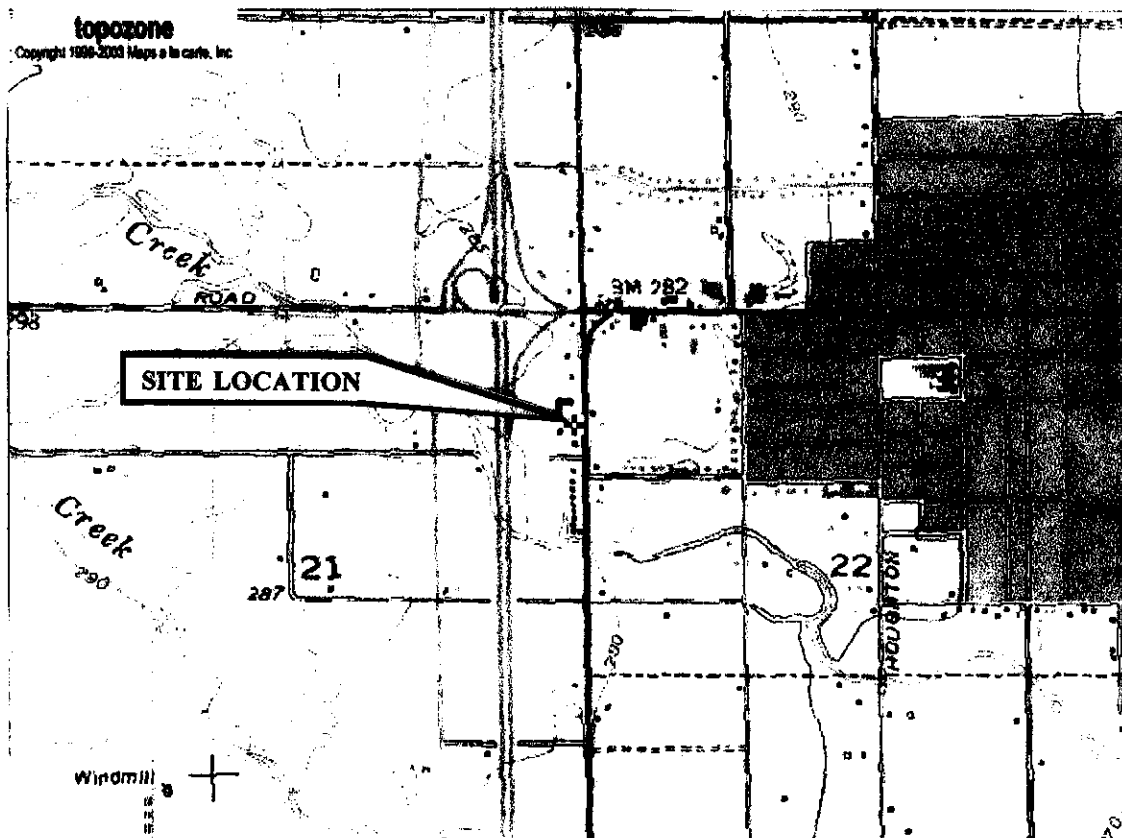
TABLE 3
Groundwater Elevations and Analytical Data
 Griswold Siblings Property
 1074 Highway 99W
 Corning, CA

Well No.	Sample Depth (ft bgs)	Sample Date	TOC (ft MSL)	DTW (ft)	GWE (ft MSL)	TPHd w/sgcu (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE, ETBE, TAME (µg/L)	Methanol (µg/L)	Ethanol (µg/L)	Total Pb (µg/L)
MW-1	25 - 40	7/13/04	284.72	30.65	254.07	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<50	<5	<10
		10/5/04	284.72	36.98	247.74	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		1/6/05	284.72	33.11	251.61	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		6/2/05	284.72	21.90	262.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
MW-2	27 - 40	7/13/04	284.46	31.33	253.13	<50	<50	0.69	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<50	<5	<10
		10/5/04	284.46	37.99	246.47	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		1/6/05	284.46	32.44	252.02	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		6/2/05	284.46	22.23	262.23	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
MW-3	25 - 40	7/13/04	284.63	29.72	254.91	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<50	<5	<10
		10/5/04	284.63	36.25	248.38	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		1/6/05	284.63	32.97	251.66	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
		6/2/05	284.63	21.48	263.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
MCL	---	---	---	---	---	100 ^b	50 ^b	1	42 ^b	29 ^b	17 ^b	5 ^b	---	---	---	---	15 ^c

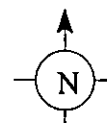
Notes:

Sample Depth	Indicates screen depth interval or depth of grab groundwater sample.
TOC	Top of casing relative to feet above mean sea level (ft MSL).
DTW	Depth to groundwater below top of casing in feet.
GWE	Groundwater Elevation (TOC-DTW) in ft MSL.
TPHd w/sgcu	Total petroleum hydrocarbons as diesel by EPA Method 8015M with silica-gel clean-up by EPA Method 3630C.
TPHg	Total petroleum hydrocarbons as gasoline by EPA Method 8260B.
BTEX	Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B.
MTBE	Methyl tert-butyl ether by EPA Method 8260B.
TBA, ETBE	Tert-butanol, ethyl tert-butyl ether,
DIPE, TAME	di-isopropyl ether, and tert-amyl methyl ether by EPA Method 8260B.
Total Pb	Total lead by EPA Method 3005 Filtr/6010B (samples collected in unpreserved containers and filtered prior to lab analysis).
<###	Not detected at or above the indicated reporting limit.
µg/L	Micrograms per liter.
MCL	California Maximum Contaminant Level for drinking water. Primary MCL or Secondary MCL shown, whichever is lower.
^b	California Secondary Drinking Water Standard for Taste and Odor Threshold.
^c	Regulatory Action Level for drinking water.

Bold indicates results greater than MCL or Secondary Drinking Water Standard.



SOURCE: topozone.com



SITE LOCATION MAP

1074 Highway 99W
Corning, California

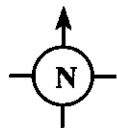
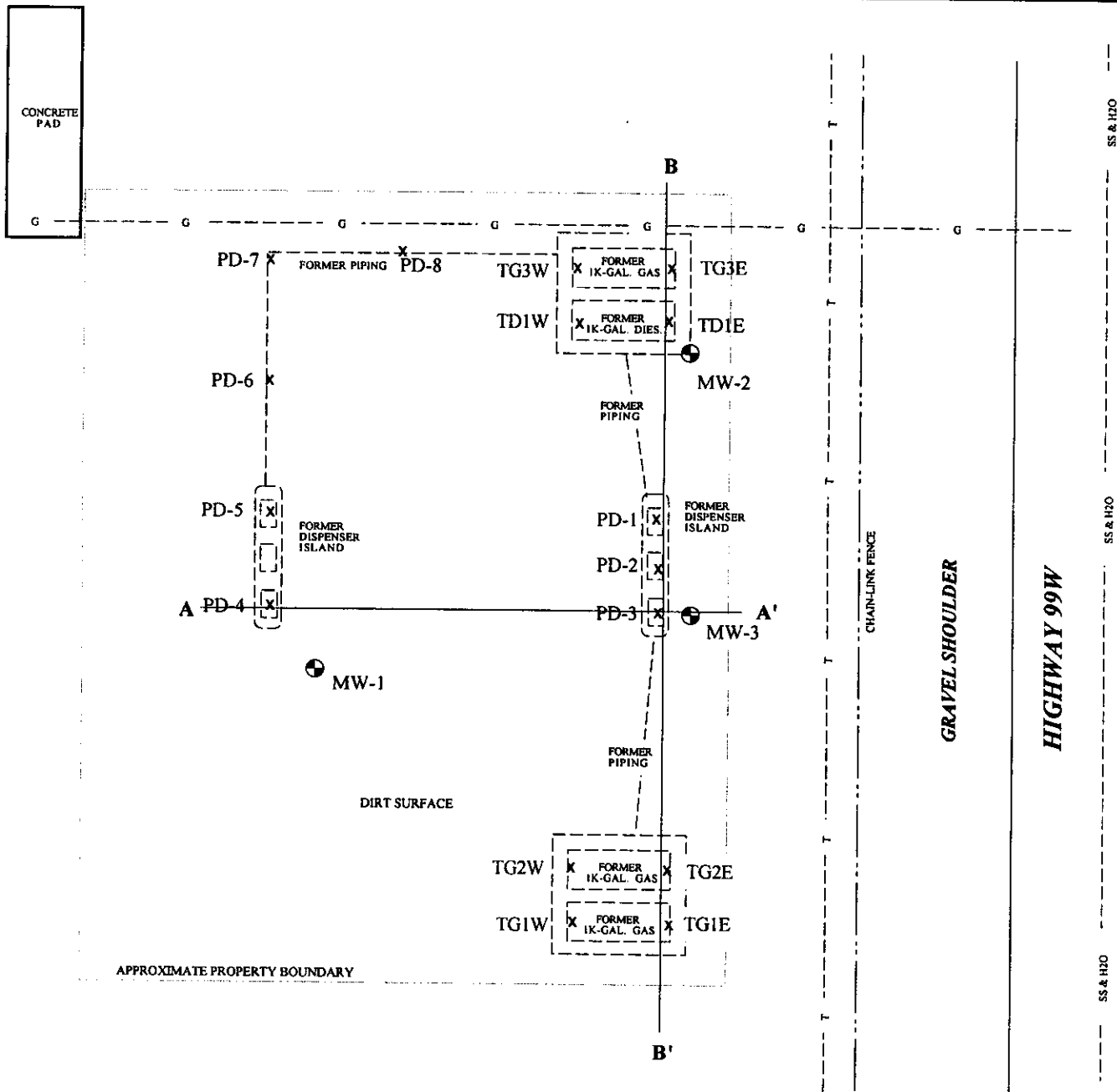


**BLUE ROCK
ENVIRONMENTAL, INC.**

Project No.
GSP-1

Figure Date
12/03

Figure
1



0 20
APPROXIMATE SCALE IN FEET

EXPLANATION

PD-2 X

UST REMOVAL SOIL SAMPLE

MW-1 ●

MONITORING WELL LOCATION

--- G ---

UNDERGROUND UTILITIES
(G = GAS, T = TELEPHONE,
S = SEWER, H2O = WATER)

SITE PLAN
Griswold Siblings Property
1074 Highway 99W
Corning, CA

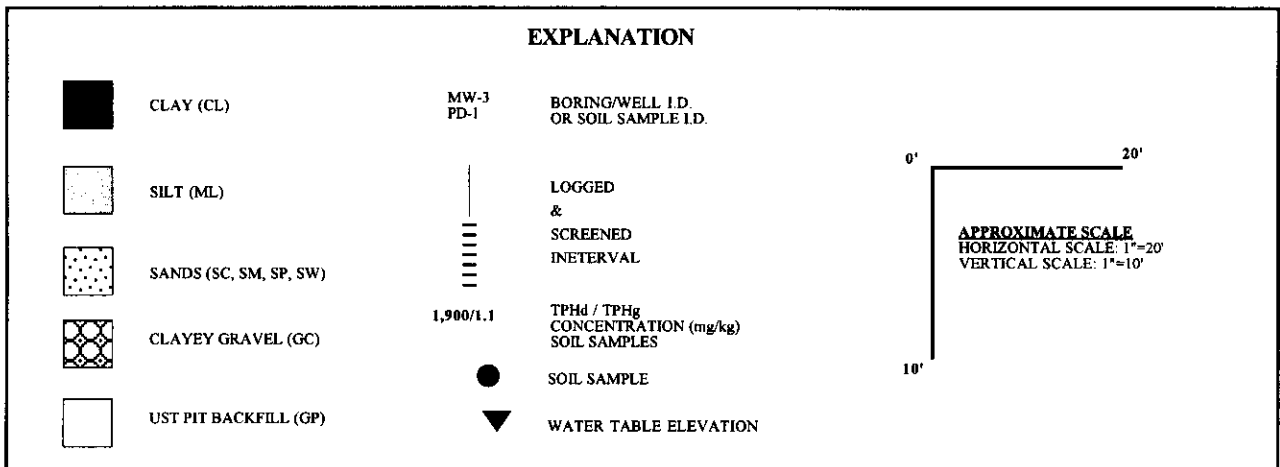
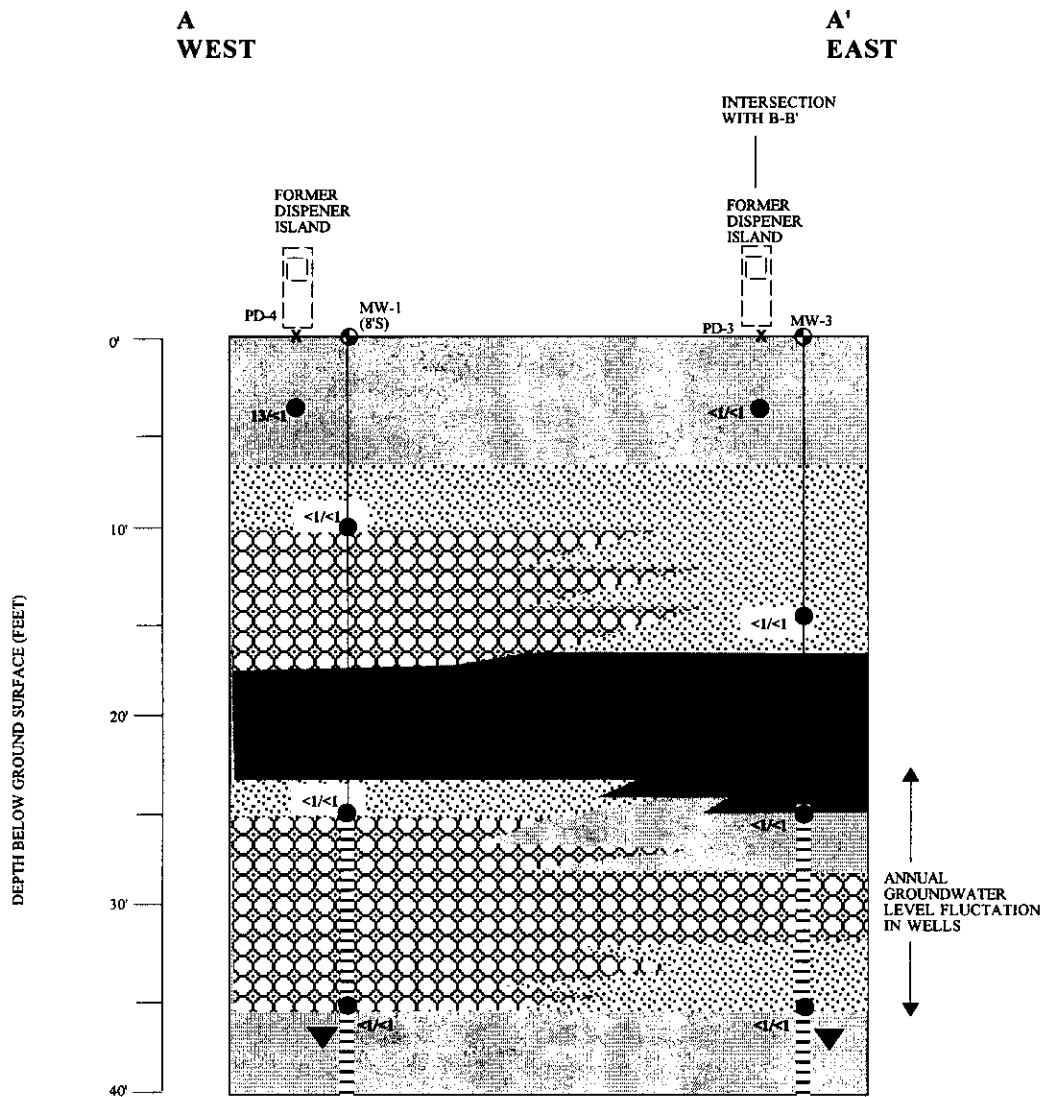


**BLUE ROCK
ENVIRONMENTAL, INC.**

Project No.
GSP-1

Report Date
6/05

Figure
2



CROSS-SECTION A-A'
 Griswold Siblings Property
 1074 Highway 99W
 Corning, CA



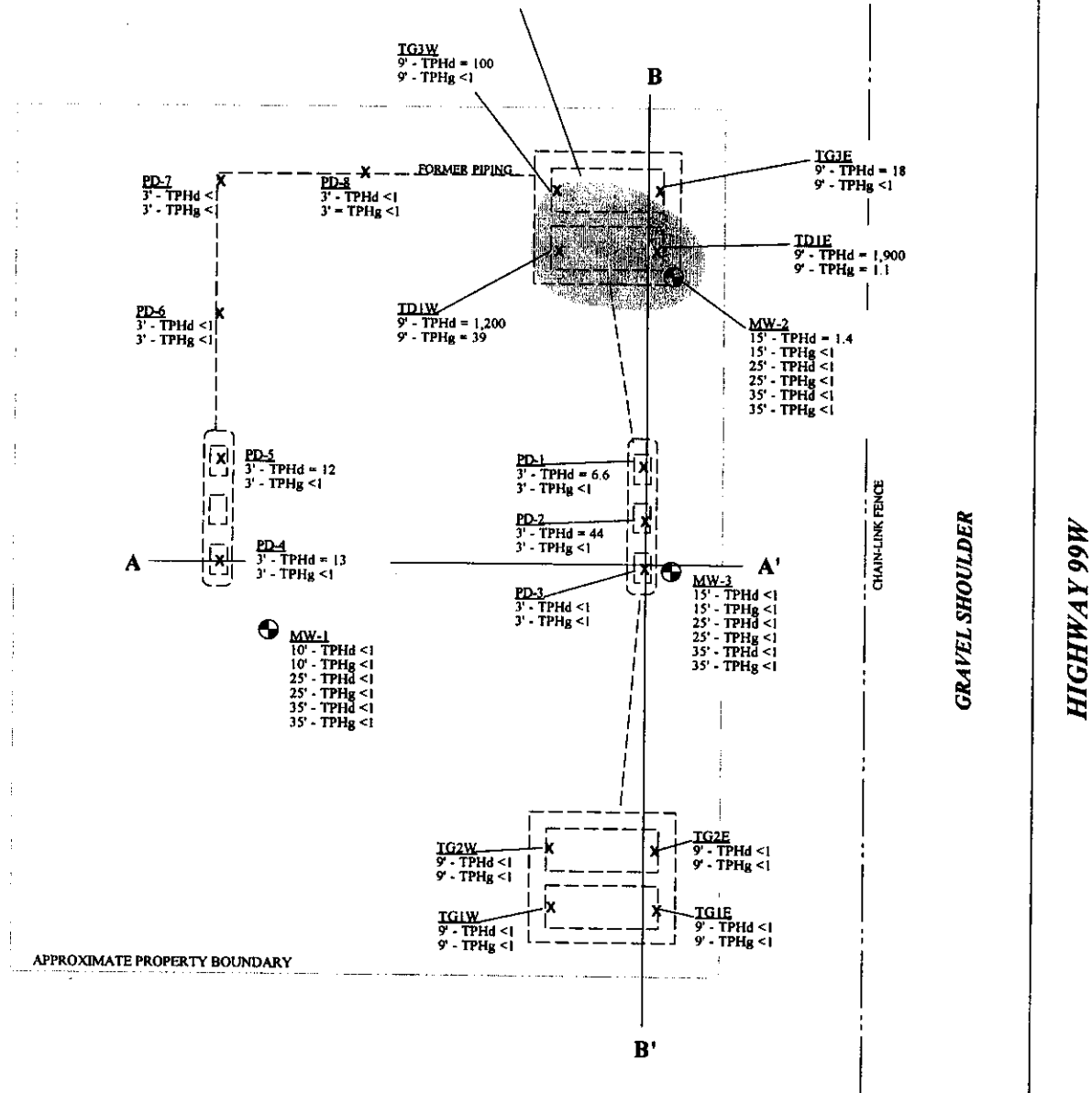
BLUE ROCK ENVIRONMENTAL, INC.

Project No.
GSP-1

Report Date
6/05

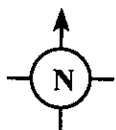
Figure
3A

ESTIMATED SOIL WITH
TPHd > 100 MG/KG
FROM DEPTH OF 6 TO 13 FEET BGS



EXPLANATION

- PD-2 x UST REMOVAL SOIL SAMPLE
- MW-1 ● MONITORING WELL LOCATION
- 3' - TPHd = 44
3' - TPHg < 1 SOIL SAMPLE DEPTH AND RESULTS
TPHd AND TPHg (MG/KG)



0 20
APPROXIMATE SCALE IN FEET

RESIDUAL SOIL IMPACTS
Griswold Sibling Property
1074 Highway 99W
Corning, CA

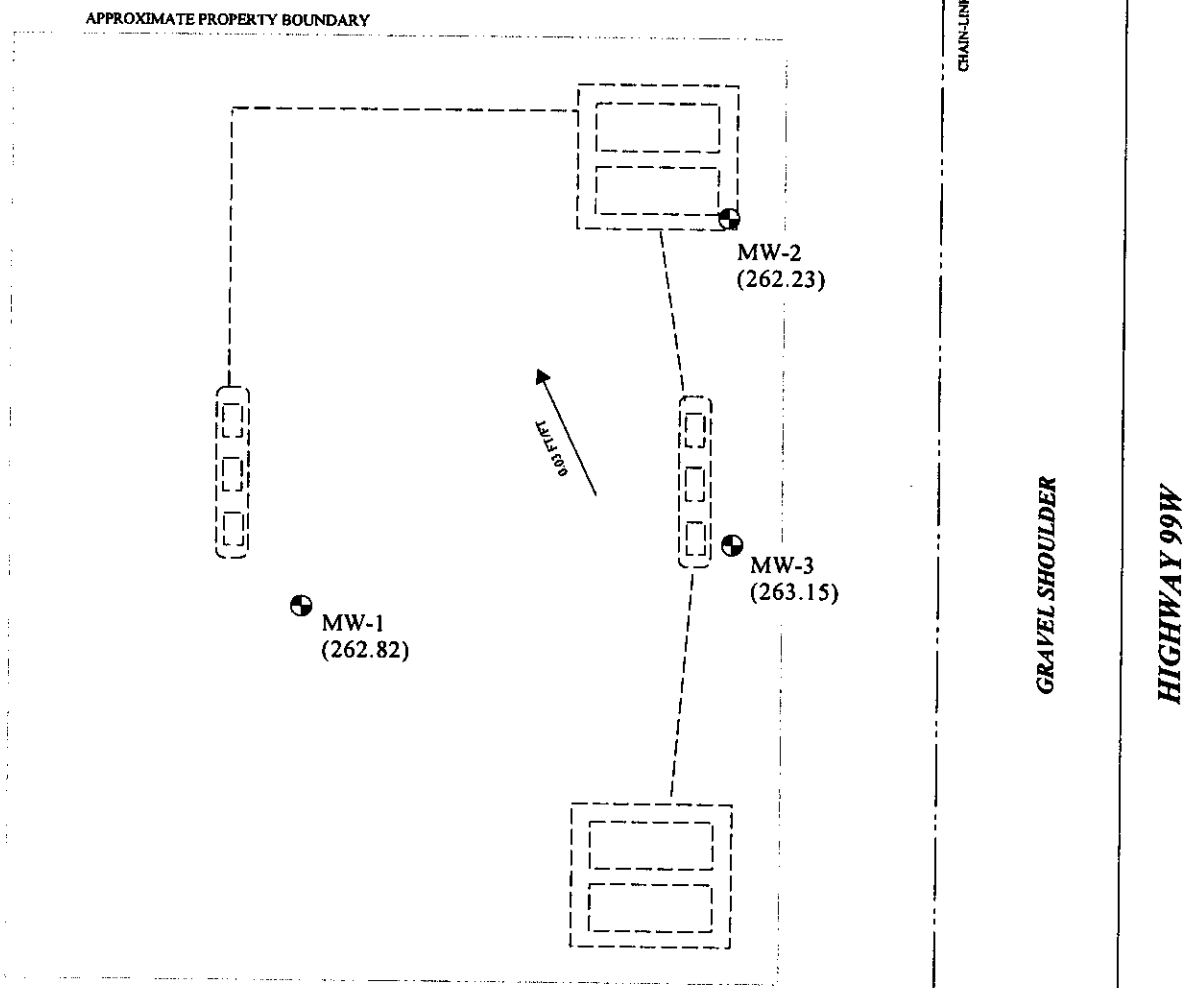


**BLUE ROCK
ENVIRONMENTAL, INC.**

Project No.
GSP-1

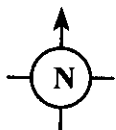
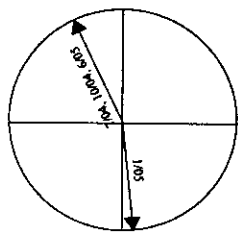
Report Date
6/05

Figure
4



EXPLANATION

HISTORICAL GROUNDWATER FLOW



0 20
APPROXIMATE SCALE IN FEET

MW-1

(150.00)

MONITORING WELL LOCATION

GROUNDWATER ELEVATION (FT MSL)



ESTIMATED GROUNDWATER
FLOW DIRECTION AND GRADIENT

GROUNDWATER ELEVATION MAP

6/2/05

Griswold Siblings Property
1074 Highway 99W
Corning, CA

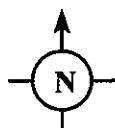
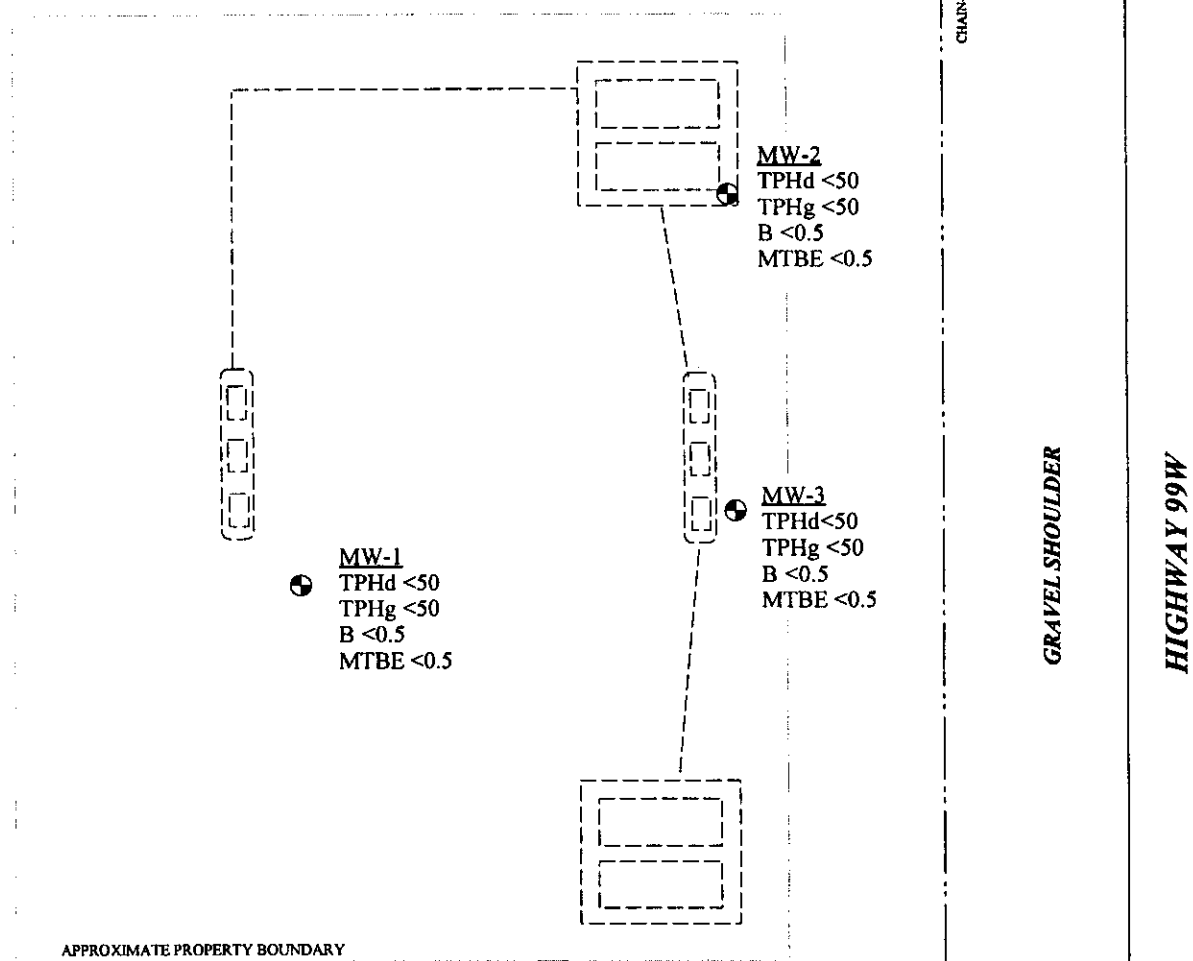


BLUE ROCK
ENVIRONMENTAL, INC.

Project No.
GSP-1

Figure Date
6/05

Figure
5



EXPLANATION

MW-1  MONITORING WELL LOCATION

MW-1
 TPHd <50
 TPHg <50
 B <0.5
 MTBE <0.5

TPHd, TPHg, BENZENE, AND MTBE
 CONCENTRATIONS (µg/L)

DISSOLVED-PHASE CONTAMINANT MAP

6/2/05

Griswold Siblings Property
 1074 Highway 99W
 Corning, CA



BLUE ROCK
 ENVIRONMENTAL, INC.

Project No.
GSP-1

Report Date
6/05

Figure
6

WELL GAUGING DATA/PURGE CALCULATIONS

Job No.: GSP-1 Location: 1074 Highway 99W Corning CA. Date: 6-2-05 Tech(s): SR

WELL NO.	DIAM (in)	DTB (ft)	DTW (ft)	ST (ft)	CV (gal)	PV (gal)	SPL (ft)	NOTES
MW-1	2	40.40	21.90	18.50	2.96	8.88	—	
MW-2	2	40.30	22.23	18.07	2.89	8.67	—	
MW-3	2	40.40	21.48	18.92	3.02	9.08	—	

Explanation:

DIAM = Well Diameter

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW)

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV, well development 10 x CV)

SPL = Thickness of Separate Phase Liquid

Conversion Factors (cf)

1 inch diameter well cf = 0.04 gal/ft

2 inch diameter well cf = 0.16 gal/ft

4 inch diameter well cf = 0.65 gal/ft

6 inch diameter well cf = 1.44 gal/ft

BLUE ROCK ENVIRONMENTAL, INC.

1169 Chess Drive, Suite C, Foster City, CA 94404 Phone (650) 522-9292 Fax (650) 522-9259

WELL PURGING DATA

SHEET 1 OF 1

Job No.: GSP-1

Location: 1074 Highway 99W
Corning, CA.

Date: 6-2-05

Tech: SR

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (μS/cm)	pH	Sample time: 1135	Sample for: (circle)
MW-1	1039	2	71.7	621	6.90	<div> <div>TPHg</div> <div>TPHd</div> <div>TPHmo</div> </div> <div> <div>BTEX</div> <div>MTBE</div> <div>8010</div> </div> <div>Other:</div>	
Calc. purge volume 8.88	1044	4	70.7	623	6.91		
	1046	6	70.5	627	6.97		
	1050	8	70.4	650	6.99		
COMMENTS: color, turbidity, recharge, etc. tan, low, good						Sampling Method: Dedicated / Disposable bailer	Purging Method: PVC bailer / Pump

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (μS/cm)	pH	Sample time: 1140	Sample for: (circle)
MW-3	1055	2	71.3	530	6.61	<div> <div>TPHg</div> <div>TPHd</div> <div>TPHmo</div> </div> <div> <div>BTEX</div> <div>MTBE</div> <div>8010</div> </div> <div>Other:</div>	
Calc. purge volume 9.08	1058	4	70.4	559	6.69		
	1101	6	70.8	536	6.63		
	1104	8	70.4	566	6.68		
COMMENTS: color, turbidity, recharge, etc. tan, low, good						Sampling Method: Dedicated / Disposable bailer	Purging Method: PVC bailer / Pump

WELL No.	TIME (24-hr)	VOLUME (gal)	TEMP. (deg. F.)	COND. (μS/cm)	pH	Sample time: 1150	Sample for: (circle)
MW-2	1111	2	70.2	746	6.69	<div> <div>TPHg</div> <div>TPHd</div> <div>TPHmo</div> </div> <div> <div>BTEX</div> <div>MTBE</div> <div>8010</div> </div> <div>Other:</div>	
Calc. purge volume 8.67	1115	4	70.3	693	6.70		
	1117	6	69.1	791	6.78		
	1120	8	71.2	686	6.76		
COMMENTS: color, turbidity, recharge, etc. tan, low, good						Sampling Method: Dedicated / Disposable bailer	Purging Method: PVC bailer / Pump

BLUE ROCK ENVIRONMENTAL, INC.

1169 Chess Drive, Foster City, CA 94404 Phone (650) 522-9292 Fax (650) 522-9259



Report Number : 44109

Date : 06/08/2005

Brian Gwinn
Blue Rock Environmental, Inc.
1169 Chess Drive Suite C
Foster City, CA 94404

Subject : 3 Water Samples
Project Name : Griswold Siblings Property
Project Number : GSP-1

Dear Mr. Gwinn,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Kiff".

Joel Kiff



Report Number : 44109

Date : 06/08/2005

Project Name : **Griswold Siblings Property**Project Number : **GSP-1**Sample : **MW-1**

Matrix : Water

Lab Number : 44109-01

Sample Date :06/02/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/07/2005
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	06/07/2005
4-Bromofluorobenzene (Surr)	96.6		% Recovery	EPA 8260B	06/07/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	06/07/2005
Octacosane (Diesel Surrogate)	98.0		% Recovery	M EPA 8015	06/07/2005

Sample : **MW-2**

Matrix : Water

Lab Number : 44109-02

Sample Date :06/02/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/07/2005
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	06/07/2005
4-Bromofluorobenzene (Surr)	94.2		% Recovery	EPA 8260B	06/07/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	06/07/2005
Octacosane (Diesel Surrogate)	100		% Recovery	M EPA 8015	06/07/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 44109

Date : 06/08/2005

Project Name : **Griswold Siblings Property**

Project Number : **GSP-1**

Sample : **MW-3**

Matrix : Water

Lab Number : 44109-03

Sample Date :06/02/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/07/2005
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	06/07/2005
4-Bromofluorobenzene (Surr)	96.5		% Recovery	EPA 8260B	06/07/2005
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	06/07/2005
Octacosane (Diesel Surrogate)	99.0		% Recovery	M EPA 8015	06/07/2005

Approved By:

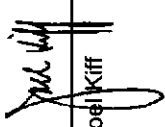

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44109
Date : 06/08/2005

QC Report : Method Blank Data
Project Name : Griswold Siblings Property
Project Number : GSP-1

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	06/07/2005					
Octacosane (Diesel Surrogate)	91.2		%	M EPA 8015	06/07/2005					
Benzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005					
Toluene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005					
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005					
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005					
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	06/07/2005					
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	06/07/2005					
Toluene - d8 (Surr)	99.5		%	EPA 8260B	06/07/2005					
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	06/07/2005					

Approved By:  Joel Kiff
KIFF ANALYTICAL, LLC
2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44109
Date : 06/08/2005

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Griswold Siblings**

Project Number : **GSP-1**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	Blank	<50	1000	1000	993	937	ug/L	M EPA 8015	6/7/05	99.3	93.7	5.84	70-130	25
Benzene	44104-01	1.2	39.0	39.1	39.0	39.8	ug/L	EPA 8260B	6/7/05	96.8	98.6	1.82	70-130	25
Toluene	44104-01	<0.50	39.0	39.1	37.8	38.4	ug/L	EPA 8260B	6/7/05	97.0	98.4	1.39	70-130	25
Tert-Butanol	44104-01	16	195	195	208	222	ug/L	EPA 8260B	6/7/05	98.6	105	6.70	70-130	25
Methyl-t-Butyl Ether	44104-01	56	39.0	39.1	90.6	88.8	ug/L	EPA 8260B	6/7/05	90.0	85.3	5.40	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 44109
Date : 06/08/2005

QC Report : Laboratory Control Sample (LCS)

Project Name : **Griswold Siblings**

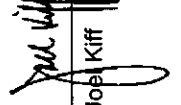
Project Number : **GSP-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	6/7/05	100	70-130
Toluene	40.0	ug/L	EPA 8260B	6/7/05	99.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/7/05	95.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/7/05	100	70-130

KIFF ANALYTICAL, LLC

Approved By:

Joe Kiff



2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

